

ABSTRACT

A method of manufacturing a semiconductor device includes providing semiconductor substrate having trenches and mesas. At least one mesa has first and second sidewalls. The method includes doping with a dopant of a second conductivity the first sidewall of the mesa, and doping with a dopant of a second conductivity the second sidewall of the mesa. A dopant of the first conductivity is then used to dope the first sidewall of the mesa, and the dopant of the first conductivity is used to dope the second sidewall of the at least one mesa. At least the trenches adjacent to the at least one mesa are then lined with an oxide material and are then filled with one of a semi-insulating material and an insulating material.

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